

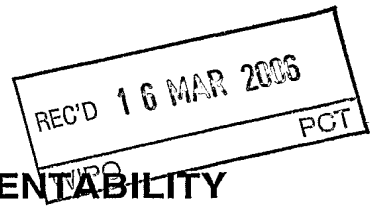
PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference 1949-22 WO CVP	FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/EP2004/001744	International filing date (day/month/year) 19.02.2004	Priority date (day/month/year) 19.02.2004	
International Patent Classification (IPC) or national classification and IPC A23L1/0522, A23L1/09, A23P1/02, C08B30/00			
Applicant <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 10px;"> AMYLUM EUROPE NV </div> TATE & LYLE EUROPE NV </div>			
<ol style="list-style-type: none"> 1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of 4 sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: <ol style="list-style-type: none"> a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 1 sheets, as follows: <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. </div> b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). 			
<ol style="list-style-type: none"> 4. This report contains indications relating to the following items: <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> Box No. I Basis of the opinion <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application </div> 			
Date of submission of the demand 03.12.2005	Date of completion of this report 15.03.2006		
Name and mailing address of the international preliminary examining authority: <div style="display: flex; align-items: center;"> <div> European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 </div> </div>	Authorized Officer Vernier, F Telephone No. +49 89 2399-8646		



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/001744

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1-7, 9-16	as originally filed
8	received on 03.12.2005 with letter of 29.11.2005

Claims, Numbers

1-20	as originally filed
------	---------------------

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing *(specify):*
 - ☐ any table(s) related to sequence listing *(specify):*
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing *(specify):*
 - ☐ any table(s) related to sequence listing *(specify):*

* *If item 4 applies, some or all of these sheets may be marked "superseded."*

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/001744

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-20
	No: Claims	
Inventive step (IS)	Yes: Claims	1-20
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-20
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Item V

- 1 The following documents are referred to in this communication:
D1: US-A-4 954 178
D2: EP-A-1 166 645
D3: US-A-4 871 398
D4: US-A-4 280 851
D5: US-A-3 706 598
2. The present application meets the novelty criteria of Article 33(2) PCT, because none of the cited prior art discloses a spray-dried starch hydrolysate having the properties listed in present claim 1 or a process for producing such a spray-dried starch hydrolysate using a step of atomising with nozzles and steam as a fluid.
3. In view of the technical problem to be solved (to provide an alternative spray dried starch hydrolysate) and its unexpected solution (the process of claim 5 leading to a product having the properties listed in claim 1), the subject-matter of claims 1-20 can be regarded as involving an inventive step (Article 33(3) PCT) over the any of the cited prior art documents, considered alone or in combination.
4. The subject-matter of claims 1-20 meets the requirements of Article 33(4) PCT because it is industrially applicable.

two-fluid nozzles is a starch hydrolysate solution, whereby this starch hydrolysate solution is atomised using steam as said fluid.

Although from EP 1 166 645, it is known to inject a maltodextrin powder in the top of a spraying tower in such way that the trajectory of this solid powder crosses the spray pattern of the spray-cook starch which exits one or more two-fluid nozzles in order to produce agglomerated particles, it is not obvious for a man skilled in the art to use the two-fluid nozzles to atomise a starch hydrolysate solution on a solid powder in order to produce a spray-dried starch hydrolysate agglomerate product having the combined properties of standard spray-dried starch hydrolysates and known spray-dried starch hydrolysate agglomerate products. The two-fluid nozzles as described in EP 1 166 645 are used for a totally different purpose, i.e. spray-cooking a starch slurry, and not for atomising a starch hydrolysate solution.

In a preferred method according to the invention, the starch hydrolysate solution has a concentration of 50 – 75% dry matter, and more preferably, of 65 – 75% dry matter.

In an advantageous method according to the invention, the steam has a pressure between 7 and 15 bar.

The weight ratio of steam versus starch hydrolysate solution (weight steam/weight hydrolysate solution) is within the range of 0,05 and 0,4, and preferably between 0,1 and 0,3.

The heating air which is introduced in the spraying tower has preferably a temperature between 160 and 300 °C, and more preferably between 180 and 250 °C.

In a preferred embodiment of a method according to the invention, the exiting air has a temperature between 90 and 120 °C.